A DISASTER MANAGEMENT PLAN FOR

//KHARA HAIS MUNICIPALITY

Volume 6 - IDP

Disaster Management

Compiled by

Dr HJ Booysen

NETGroup SOUTH AFRICA

In partnership with Shanduka Energy (Pty) Ltd

TABLE OF CONTENTS

1 Background

Disaster Management refers to programmes and measures designed to prevent mitigate, prepare for, respond to and recover from the effects of all disasters.

Disasters, however, are fundamental reflections of normal life. They are consequences of the ways societies structure themselves, economically and socially, the ways our communities and the Municipality interact, and the ways that relationships between the decision makers are sustained. Hence a flood or a drought is not a disaster in and of itself.

The disaster stems from the fact that certain communities or groups are, for example, forced to settle in areas susceptible to the impact of a raging river. It is essential to make a distinction between hazards and disasters, and to recognise that the effect of the former upon the latter is essentially a measure of the society's vulnerability.

2 The progression of vulnerability

The measures of vulnerability referred to in Paragraph 2 can be best described by a so-called "disaster crunch model".

The progression of vulnerability is seen in three stages:

- **Underlying Causes**

  A deep-rooted set of factors within a society that together form and maintains vulnerability.

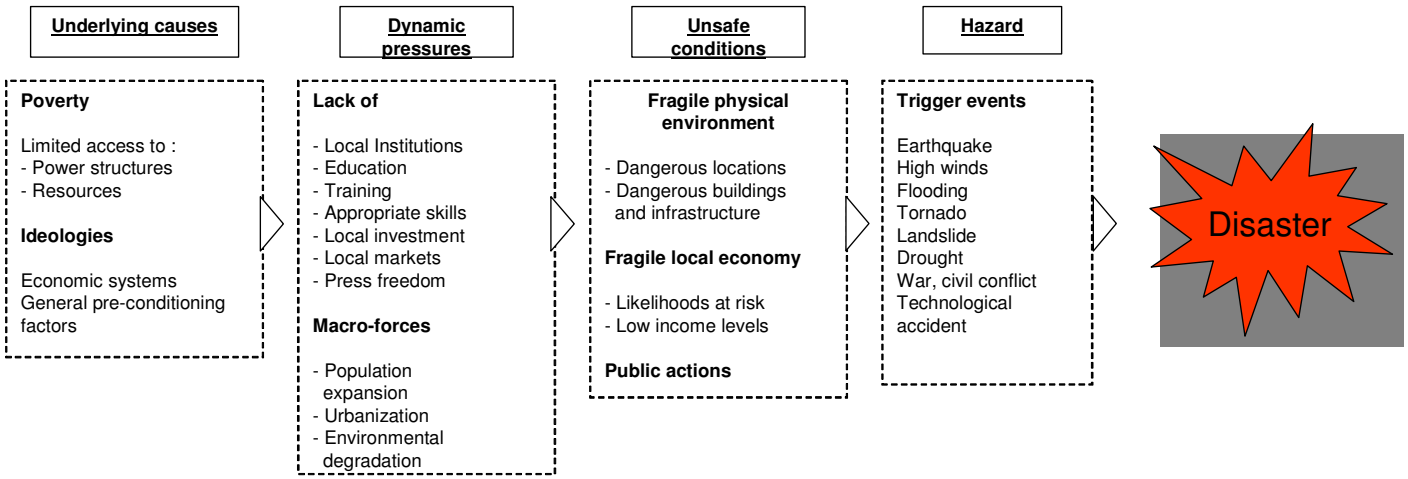
- **Dynamic Pressure**

  A translating process that channels the effects of a negative cause into unsafe conditions. This process may be due to a lack of basic services or provision or it may result from a series of macro-forces.

- **Unsafe conditions**

  The vulnerability context where people and property are exposed to the risk of disaster; the fragile physical environment is one element; other factors include an unstable economy and low income levels.

The summary of key factors for the disaster crunch model (Figure 1) can best be reflected as follows:



Disaster

=

Vulnerability

+

Hazard

Figure 1: Key factors for the disaster crunch model

Disaster Management must, by means of using all resources at its disposal (Local, Provincial and National Government structures, NGO's, Commerce and Industry, Communities, Educational Institutions, Churches, etc), address the underlying causes, dynamic pressures and unsafe conditions to limit and, where possible, prevent, a disaster from occurring.

3 Disaster Management Framework for //Khara Hais Municipality

Section 42 of the Disaster Management Act 57 of 2002, specifies that each municipality must compile a Disaster Management Framework (DMF). For this purpose, the //Khara Hais Municipality (KHM) appointed this consortium to compile the Disaster Management Framework (DMF).

The main aim of the DMF is to provide a coherent, transparent and inclusive policy on disaster management for KHM. This will have to be adopted by Council, to make it binding on the District Municipality, after having cleared the contents thereof with each Local Municipality.

The DMF includes the following aspects:

- Key Performance Areas (KPA's);
- Setting of the vision, mission and objectives for Disaster Management;
- SWOT Analysis;
- Disaster Management Structure;
- Disaster Management Organisation;
- Possible Disaster Management projects;
- Primary and secondary roles and responsibilities of line departments and
- Mutual Aid Agreements.

The background and methodology used in this project will first be discussed, after which each element will be addressed for KHM to compile and finalised the DMF.

After the publication of the proposed National Disaster Management Framework (Government Gazette, Vol 467, No 26390, 28 May 2004, Pretoria) it became necessary to adjust the DDMF accordantly. During the compilation of this framework, no Provincial Framework for the Free State Province was available, hence it was not possible to take cognisance of the contents that could influence the municipal framework, and this will have to be undertaken once both the National and provincial Frameworks have been finally adopted.

The National Disaster Management Framework has identified four Key Performance Areas (KPA's) and three enablers, namely:

KPA's

- Integrated Institutional Capacity For Disaster Risk Management
- Disaster Risk Assessment
- Disaster Risk Reduction
- Response And Recovery

Enablers

- Information Management And Communication
- Education, Training, Public Awareness And Research
- Funding Arrangements For Disaster Risk Management

It is important to emphasis the intention of the Disaster Management Act, namely to prevent or at least mitigate the negative consequences of disasters. Taking cognisance of these KPA's and Enablers was possible to first formulate the vision and mission for the Disaster Management Component of KHM before appropriate KPA's can be formulated

3.1 Setting the vision and mission

Vision

To enhance and ensure sustainable development in the //Khara Hais Municipal area of jurisdiction through effective risk reduction projects and plans.

Mission

A holistic, integrated, and cost effective approach in disaster management to reduce the level of disaster risk at all communities, properties and infrastructure in the KHM area of jurisdiction.

3.2 Key Performance Areas for KHM

To be inline with the national disaster management guidelines and to successfully implement disaster management in KHM, the following KPA's are recommended:

- Institutional Capacity Building for Disaster Management.
- Pre-Disaster Risk Reduction.
- Post Disaster Recovery.
- Public Awareness, Education, Training and Research.
- Monitoring, Evaluation and Improvement.

In supporting these KPA's, two enablers are recommended, namely;

- Information management and communication.
- Funding arrangements for disaster risk management.

For each identify KPA, appropriate objectives will be formulated and will be discussed next.

KPA I: Institutional Capacity Building for Disaster Management.		
No	**Objective**	**Term**
Objective 1:	To establish effective institutional arrangements, e.g. disaster management structure, and -organisation for the development, approval and implementation of an integrated disaster management policy.	Short / Medium
Objective 2:	To identify and establish appropriate disaster management task teams to identify, co-ordinate and implement appropriate disaster risk reduction measures in the KHM area of jurisdiction.	Short
Objective 3	To establish and maintain a Municipal Disaster Management Centre (MDMC) as a satellite facility for KHM in close collaboration with the Siyanda District Municipality.	Medium
Objective 4:	To establish a Municipal Disaster Management Advisory Forums.	Short
Objective 5:	To establish, train and maintain a Disaster Volunteer Contingent which will assist in pro-active, reactive and post disaster matters.	Medium / Long
Objective 6:	To develop a comprehensive Disaster Management Information and Communication Plan (DMICP).	Long

KPA II: Pre-Disaster Risk Reduction.		
No	**Objective**	**Term**
Objective 1:	To identify all potential hazards and threats by *inter alia* using indigenous knowledge.	Short
Objective 2	To execute a hazard, vulnerability and risk assessment, using GIS, to compile appropriate disaster hazard, vulnerability and risk profile map for the KHM area of jurisdiction.	Short
Objective 3	To align disaster risk profile maps with SDF of KHM to draft appropriate sustainable development guidelines for Town and Regional planner.	Short / Medium
Objective 4	To prioritise identified risks in the KHM area of jurisdiction	Short
Objective 5	To identify appropriate risk reduction strategies, projects and plans to reduce the level of disaster risk in the KHM area of jurisdiction.	Short / Medium
Objective 6:	To align prioritised risk with the IDP of KHM for capital budgeting purposes	Short / Medium
Objective 7:	To implement identified disaster risk reduction projects in the KHM area of jurisdiction.	Medium / Long
Objective 8:	To link each risk reduction strategy with Key Performance Areas of Line Functionaries to ensure effective and efficient implementation of risk reduction strategies.	Medium

KPA III: Post Disaster Recovery.		
No	**Objective**	**Term**
Objective 1:	To develop effective and efficient response and recovery plans (SOP's and contingency plans) for all identified hazards and risks.	Short
Objective 2	To execute regular response exercises to upgrade the readiness status of the EMS component of KHM.	Short / Medium
Objective 3	To execute regular training exercises with identified volunteers of KHM.	Short / Medium
Objective 4	To avert or reduce the potential impact in respect of health impacts, personal injury, loss of life, property, infrastructure or environment.	Medium / Long
Objective 5	To ensure that relief operations following significant events are coordinated and equitably distributed.	Medium
Objective 6	To ensure that all rehabilitation and reconstruction strategies conducted following a disaster are implemented in a developmental manner.	Short / Long

KPA IV: Awareness, Education, Training and Research.		
No	**Objective**	**Term**
Objective 1:	To disseminate Disaster Management information to communities at risk, to the public and other identified role players after the execution of a hazard, vulnerability and risk assessment.	Short / Long
Objective 2	To continuously execute public awareness campaigns to promote a culture of risk avoidance among stakeholders.	Short to Long
Objective 3	To ensure positive media coverage and publicity to increase public awareness and understanding of disaster management.	Short
Objective 4	To develop appropriate educational and training programmes for disaster management to be implemented into regular training programmes.	Short / Medium
Objective 5:	To create applied knowledge through disaster management research programmes.	Long

KPA V: Monitoring, Evaluation and Improvement.		
No	**Objective**	**Term**
Objective 1:	Performance audits, self-assessments and peer reviews.	Short / Long
Objective 2	Mechanisms required for monitoring incidents and significant events, disaster review and reporting.	Short / Medium
Objective 3	Guidelines for rehearsals, simulations, exercises and drills to evaluate the effectiveness of disaster management planning.	Medium / Long
Objective 4	Highlights the resources required for effective monitoring, evaluation and improvements.	Short / Medium

3.3 Enablers

3.3.1 Disaster Management Information System

Table 1 and Table 2 represent the performance indicators, monitoring and reporting mechanisms that can be used to help with implementing the Disaster Management Information and Communication Strategy. The tables consist of items that can be used to measure success of implementation, indicators to test it and place to ensure that the task is completed in time.

Table 1: Performance indicators, monitoring and reporting for Disaster Management Information System

Item	**Measures of success**	**Indicators**	**Date of completion**
User Requirements Analysis	Defining system boundaries	User specifications	
Capacity Building	Organizational structure	Organizational structure accepted by key role players for information and communication function	
Training	Training modules developed, Staff identified and Personnel trained	Training evaluation accepted by key role players	
Baseline data collection	Baseline data collected	Data collection completed and verified	
Standards	Completed standardized data collection & reporting approach and templates agreed.	Templates agreed by key players	
Develop DMIS	System designed and tested	Key role players test system	
Spatial Data Modeling and development of GIS applications	A GIS applications designed and tested	Key players test system	

Item	Measures of success	Indicators	Date of completion
Non Spatial Data Modeling and Database development	Functioning database in place	Key players test database with mocked data	
Training staff in data entry & managing DMIS	DMIS run by staff	Staff trained to run DMIS	
Baseline data entry	Baseline data entered	Data entry completed.	
Integrating GIS, DMIS and Database, Testing, documentation & Implementation	Functioning DMIS in place	Key players test system	

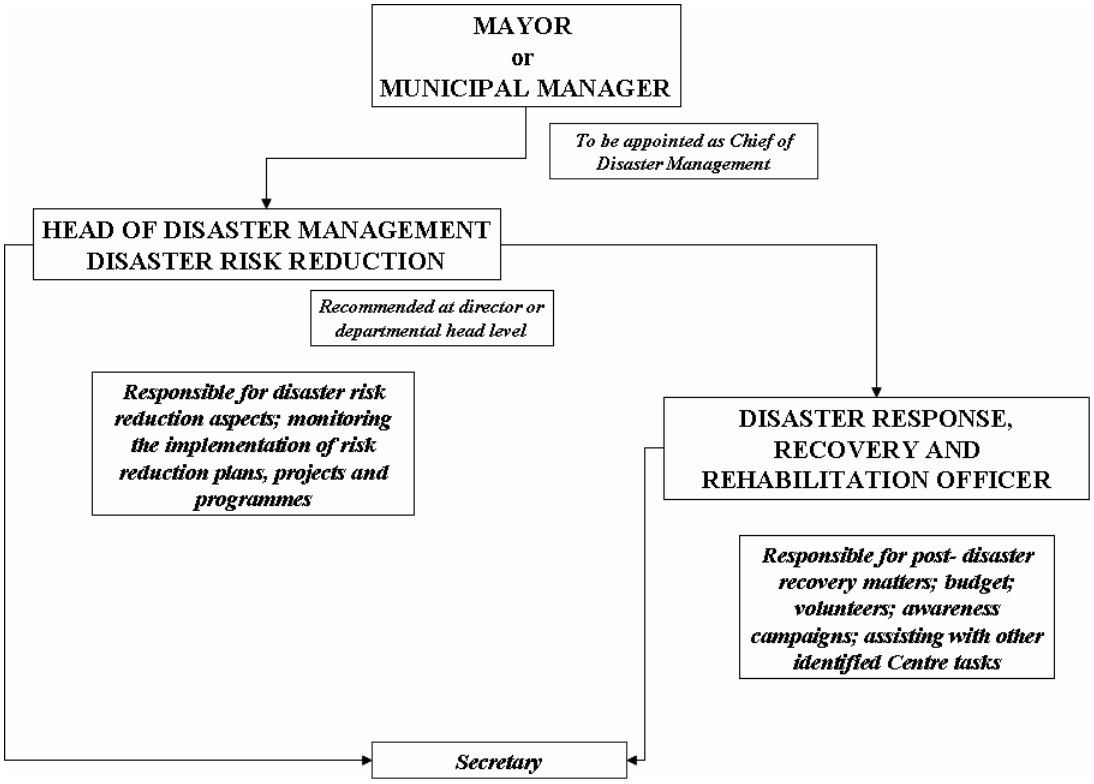
3.3.2 Disaster Management Communication System

Table 2: Performance indicators, monitoring and reporting for Disaster Management Communication System

Item	Measures of success	Indicators	Date of completion
User Requirements Analysis	Defining system boundaries	User specifications	
Gap analysis	Gap analysis report indicating the gap that exist between what is available and the needs	List of what to be done	
Capacity Building	Organizational structure	Organizational structure accepted by key role players for information and communication function	

Item	Measures of success	Indicators	Date of completion
Training	Training modules developed, Staff identified and Personnel trained	Training evaluation accepted by key role players	
Develop DMCS	System designed and tested	Key role players test system	
Radio communication via link/base radio networks	System installed and tested	Key role players test system	
Create radio linkage with emergency vehicles	System installed and tested	Key role players test system	
Implement telephone system Vo/ Technology - PC control voice over intranet protocol technology	System installed and tested	Key role players test system	

4 Disaster Management Structure



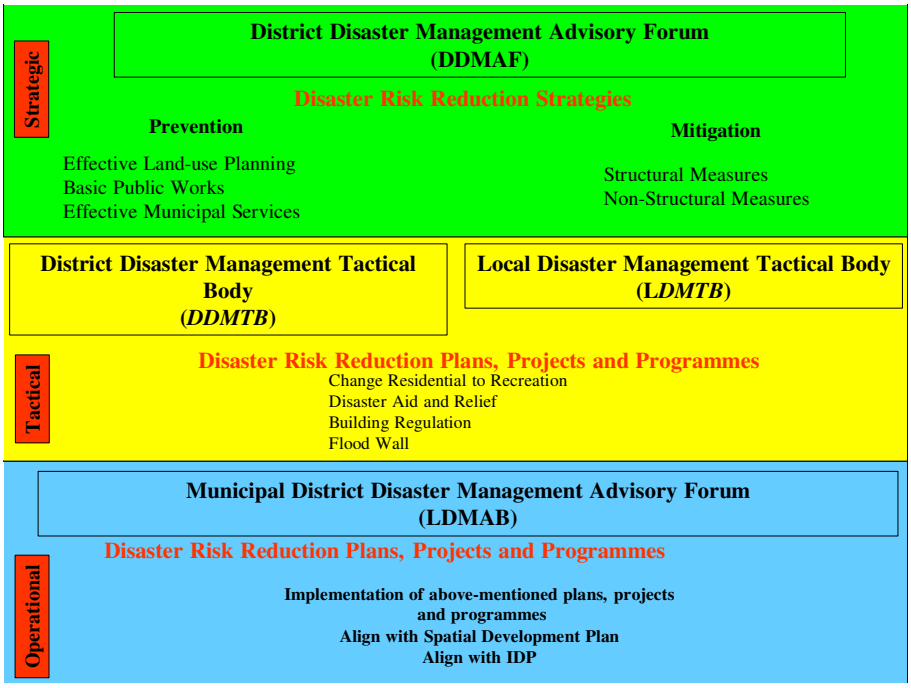
A new structure for disaster management is proposed, mainly because of the new focus of disaster management to be pro-active in contrast with a previously reactive approach to respond to disasters. The proposed structure is a recommendation to KHM that a head of disaster management and one additional official be appointed to implement the disaster management act with all its requirements.

1. It is highly recommended that the Mayor / Executive Mayor or the Municipal Manager be appointed as Chief of Disaster Management.
2. It is recommended that a head for Disaster Management be appointed (which will also act as the head of the centre), assisted by one official, predominately responsible for disaster response, recovery and rehabilitation activities. Both officials to be assisted by one secretary.
3. The other supporting structure below the head is also recommended as reflected, as the area of jurisdiction has increased and field of activity now also covers extensive proactive measures that were not required before.

5 Disaster Management Organization

The disaster management organisation ensures that disaster risk reduction will be implemented on a **strategic**, **tactical** and **operational** level. This approach will ensure that disaster management plans of the district and local municipalities will dovetail with each other.

When implementing disaster risk reduction strategies in the KHM area of jurisdiction, it is deemed necessary that the process will be fully consulted with the SDM. The following example can be used;

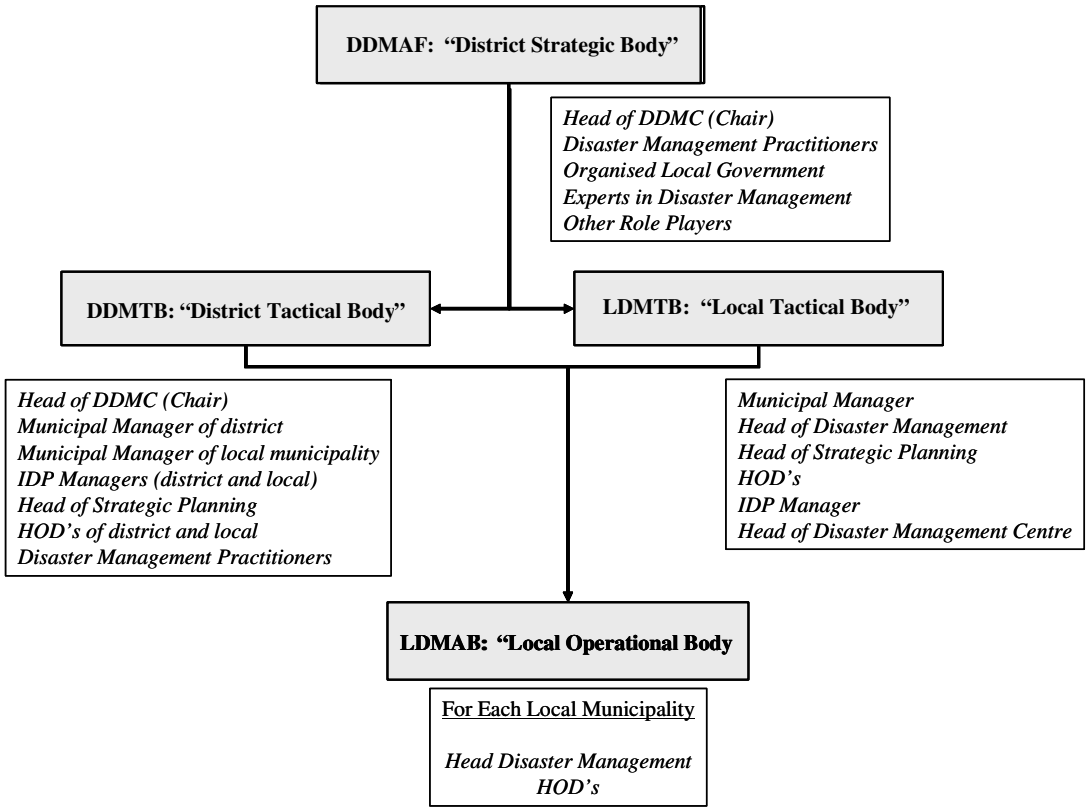


If the District Disaster Management Advisory Forum (DDAMF) uses effective land-use planning as a preventative strategy to reduce the risk floods, it became the responsibility of the District Disaster Management Tactical Body (DDMTB) and the Local Disaster Management Tactical Body (LDMTB) to implement the proposed strategy in their area of jurisdiction.

Effective land-use planning can be breakdown further into an appropriate disaster risk reduction tactic, namely to change the effected residential area into an effective recreation facility. This will be predominately the responsibility of both the DDMTB and LDMTB.

With an effective recreation facility as the proposed disaster risk reduction tactic, the Municipal Disaster Management Advisory Committee / Forum (LDMAB) will evaluate different recreation facilities for the effected flood prone area. In consultation with the community, the LDMAB will proposed a disaster risk reduction project, namely to change the residential area into an appropriate soccer field. This proposed project will than be aligned with the SDF and IDP of the municipality. As soon as the funds are approved and made available it will be the responsibility of the identified line-department to implement the proposed and approved project. In this way, it becomes possible to reduce the level of disaster risk in a co-ordinated, holistic and sustainable way.

With this background, the following disaster management structure is proposed for KHM.



1. Establish a District Disaster Management Advisory Forum (DDMAF) – Focus on Strategic issues.
2. Establish a District Disaster Management Tactical Body (DDMTB) – Focus on Tactical issues.
3. Establish a Local Disaster Management Tactical Body (LDMTB) – Focus on Tactical issues.
4. Establish the Local Disaster Management Advisory Body (LDMAB) – Focus on Operational issues.

Notwithstanding the fact that the //Khara Hais Municipality (KHM) does not yet have an approved organisation, it is highly recommended that KHM discussed this recommended structure, as this is crucial in the implementation of any risk reduction project in the KHM area of jurisdiction.

6 Roles and Responsibilities

In order the formulate and implement appropriate disaster risk reduction strategies, it is extremely important that each line department at all spheres of government knows its primary and secondary roles and responsibilities and forms an integral part of the DMF, Hence, the outlays of the roles and responsibilities of the line departments at each local municipality are in the Disaster Management documentation.

7 Hazard and Risk Assessment

The main aim of this risk assessment is only to prioritise all identified hazards for IDP purposes. Hence, all identified hazards were prioritised to give an indication on how to spend the capital budget of municipalities. It was not the purpose of this assessment to execute a detailed risk assessment for each identified hazard. Detailed risk assessments are very costly and forms part of the implementation of risk reduction strategies by each Line Department. The worst-case scenario for all identified hazards was used to execute the risk assessment.

The process involved:

- Hazard identification;
- Hazard assessment;
- Vulnerability Assessment;
- Identify community at risk and
- Hazard Risk Assessment.
- Compile Risk Profiles

The results received from the risk assessment for each local municipality will be discussed next.

Table 3 summarises the identified hazards for the municipality.

Table 3: //Khara Hais hazard profile

Ward Number	Air Pollution	Aircraft	Drought	Erosion	Fire	Floods	Hazmat	Lightning	Water Pollution
8	✓	✓	✓	✓	High	✓	✓	1-2	✓
9	✓	✓	✓	✓	High	✓	✓	2-3	✓
10	✓	✓	✓	✓	High	✓	✓	1-2	✓
11	✓	✓	✓	✓	High	✓	✓	2-3	✓
12	✓	✓	✓	✓	High	✓	✓	2-3	✓
1	✓	✓	✓	✓	Medium to high	✓	✓	1-2	✓
2	✓	✓	✓	✓	Medium to high	✓	✓	1-2	✓

Ward Number	Air Pollution	Aircraft	Drought	Erosion	Fire	Floods	Hazmat	Lightning	Water Pollution
3	✓	✓	✓	✓	Medium to high	✓	✓	1-2	✓
4	✓	✓	✓	✓	Medium to high	✓	✓	1-2	✓
5	✓	✓	✓		Medium to high	✓	✓	1-2	✓
6	✓	✓	✓	✓	Medium to high		✓	1-2	✓
7	✓	✓	✓	✓	Medium to high		✓	1-2	✓

Table 4 shows the vulnerability profile of //Khara Hais.

Table 4: //Khara Hais Vulnerability profile

Name	Air Pollution	Aircraft	Drought	Erosion	Fire	Floods	HAZMAT	Lightning	Water Pollution
Kalksloot		✓	✓	✓	Medium to high		✓	1-2	
Karos		✓	✓		Medium to high		✓	2-3	
Kliphard		✓	✓		Medium to high	✓		1-2	✓
Klippunt		✓	✓	✓	Medium to high	✓		1-2	✓
Koppie Eiland		✓	✓	✓	Medium to high	✓		1-2	✓
Lambrechtsdrift		✓	✓		Medium to high	✓	✓	2-3	

Name	Air Pollution	Aircraft	Drought	Erosion	Fire	Floods	HAZMAT	Lightning	Water Pollution
Leerkrans	✓	✓	✓		Medium to high			2-3	
Louisvale		✓	✓	✓	Medium to high	✓	✓	1-2	✓
Louisvale Road	✓	✓	✓		Medium to high		✓	1-2	✓
Pabello	✓	✓	✓	✓	Medium to high		✓	1-2	✓
Raaswater		✓	✓	✓	Medium to high			1-2	✓
Rosedale	✓	✓	✓	✓	Medium to high	✓	✓	1-2	✓
Ses Brugge		✓	✓	✓	Medium to high	✓	✓	1-2	✓
Straussburg	✓	✓	✓	✓	Medium to high	✓	✓	1-2	
Swartkop		✓	✓		Medium to high			1-2	
Upington	✓	✓	✓	✓	High	✓	✓	1-2	✓

8 Disaster Risk Reduction Strategies

All disaster risk management plans must give explicit priority to the core principles of disaster prevention and mitigation. Internationally, disaster prevention, mitigation and preparedness are referred to as disaster risk reduction measures, mainly because it lessen likelihood of harmful losses by avoiding endangering hazards or reducing vulnerability. In this way, prevention and mitigation are central to achieving the goal of disaster risk reduction, in which vulnerabilities and disaster risks are reduced an sustainable development opportunities strengthened.

It is often difficult to distinguish between preventive or mitigative intervention. For this reason it is more practical to refer to risk reduction measures. Both (prevention and mitigation measures) minimise the risk of disasters.

Disaster prevention refers to actions that provide "outright avoidance" of the adverse impact of hazards and related environmental, technological and biological disasters. Strategies applicable to preventive intervention are *inter alia (*see Appendix A for detail list*)*;

- Effective land-use planning,
- Basic public works and
- Effective municipal services that factor in the frequency and severity of natural or other hazards as well as human actions.

Disaster Mitigation refers to structural and non-structural measures that are undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards on vulnerable areas, communities and households. These efforts can target the hazard or threat itself – e.g. a fire break that stops a fire spreading close to residential areas. This is often referred to as structural mitigation, since it requires **infrastructure or engineering** measures to keep the hazard away from those at risk.

Disaster Risk Reduction initiatives must also be included in other structures and processes, hence the Disaster Management Plan has to be aligned with the Spatial Development Plan and the IDP.

- **Spatial development planning**

  Disaster risk is driven by both hazard and vulnerability factors reflected in spatial development frameworks. All disaster risk assessment findings are directly applicable to spatial development planning. Hence, all relevant spatial information must inform disaster risk reduction planning and also ensure that verified risk information is incorporated into spatial development plans and maps.

- **Integrated development planning**

  Disaster risk reduction efforts are multi-sectoral efforts focused on vulnerability reduction over a medium to long term period. To be efficient and effective they must be incorporated into ongoing IDP projects, processes, programmes and structures. They are best planned and implemented as development initiatives through IDP mechanisms and phases.

- **Risk avoidance enforcement**

  Critical components of effective disaster risk reduction are regulations, standards, by-laws and other legal enforcement instruments that discourage risk-promotive

behaviour and minimize the potential for loss. Within provincial and municipal spheres, this may involve:

- amendment of urban planning standards
- amendment of land-use regulations and zoning
- amendment of minimum standards for environmental impact assessments
- introduction of standards for risk-proofing lifeline services and critical facilities from known priority disaster risks
- introduction of by-laws to implement extraordinary measures to prevent an escalation of a disaster or to minimize its effects.

The next diagram (Figure 1) summaries the implementation of appropriate disaster risk reduction strategies at three levels, namely a strategic, tactical and operational level.

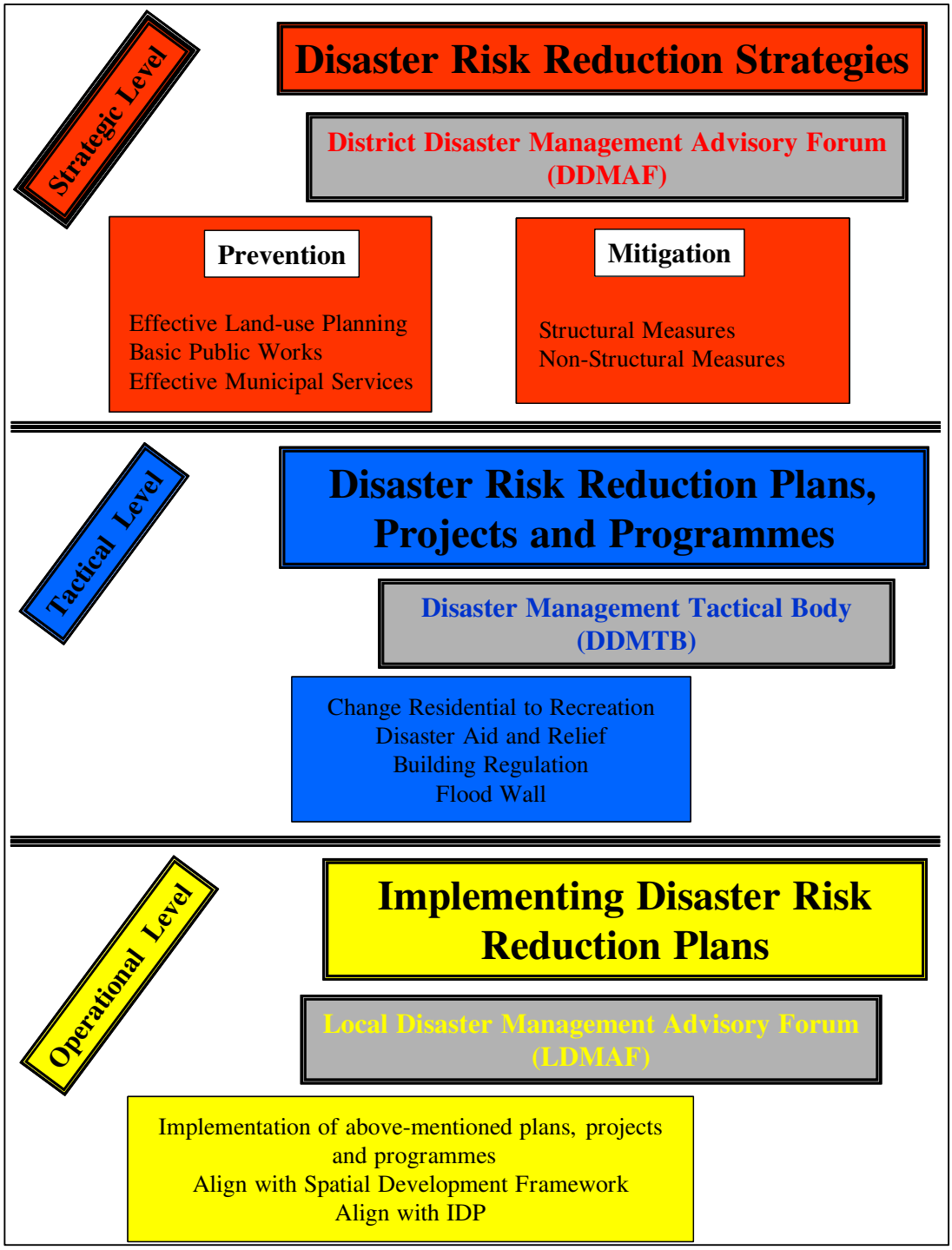


Figure 1: Three levels of implementing disaster risk reduction strategies, plan and projects.

Disaster Management Action Plan (DMAP)

- The following points are discussed in the DMAP

- Municipal Disaster Management Centre (DMC);
- Disaster Management Organisation, Forums and Committees;
- Disaster Management Structure;
- Disaster Management Volunteers;
  Reactive Plans;
- Pro-active Plans;
- Utilization of Modern Technology;
  Public Relations and
- Disaster Risk Reduction.

9 Disaster Management Manual

The absence of appropriate Disaster Management programmes, resulting from detailed Disaster Management planning, could (and probably will) result in the following after a disaster has occurred:

- More and extended hardship (especially amongst those that can ill afford it);
- An increase in the disaster and impact consequences;
- Greater and avoidable financial strain and delay in economic recovery and urgently needed new developments;
- Re-scheduling of development funds to address the consequences of a disaster;
- Hesitancy for investors to invest in an area that cannot deal effectively with or limit avoidable disasters;
- Avoidable additional loss of life, property and community infrastructures;
- Greater possibility of epidemics;
- Enhanced chance of political instability and
- Potentially a prolonged disruption in essential services.

On the pro-active side, the following could be the results in the absence of effective disaster management planning and programmes:

- It prepared communities;
- Little or no effective community awareness programmes;
- Duplication of efforts;
- Ineffective and incomplete vulnerability assessments;

- Uncoordinated and more costly prevention and mitigation strategies and
- No guarantee of exclusivity and the possibility of community and other stake holder rejections of well intended projects and programmes

It is only when effective and efficient Disaster Management planning and programmes are in place, that the following main advantages could be derived:

- It will contribute substantially to the creation of the correct climate for sustainable development to succeed;
- It will enhance the local economy and stimulate growth and thus help to address poverty;
- It will ensure greater stability;
- It will strengthen existing infra-structure;
- It will build confidence in the Northern Free State District Council's ability to govern effectively;
- It speeds up recovery and rehabilitation after a disaster;
- It will limit the negative impact that disasters have on communities, commerce and industry and the supply of essential services and
- It helps to make systematic, orderly and effective, that would otherwise have been arbitrary, chaotic and ineffective.

To ensure the above a The Disaster Management Manual was included in the reports. The manual cater for the following:

- Essential Information on Development Projects
- Essential Information on Mitigation Projects (to be available at the Disaster Management Centre)
- Essential Information on Prevention Projects (to be available at the Disaster Management Centre/facility)
- Essential information on Awareness and Preparedness Projects
- Contingency plans: Generic Checklists / aide memoirs
    - Emergency Housing Centre – Suitable Location
    - Emergency Housing Centre - Establishment
    - Emergency Feeding Centre – Suitable Location
    - Emergency Feeding Centre: Establishment

- Forward Command Post
- Casualty Clearing Post Checklist
- Request for Disaster Aid
- Disaster and Damage Assessment
- Establishment of a Holding area for relief teams, equipment and vehicles.
- Trauma / stress handling of relief workers
- Trauma / stress handling of victims of disasters
- Assembly Point for Evacuees

- Contingency Plans: Specific scenarios checklists/aid memoirs:
  - Floods
  - Tornado
  - Major Rural Fire
  - Major Urban Fire
  - Dam Failure
  - Drought
  - Major Disruption in Power Supply
  - Major Disruption in Water Supply
  - Media Liaison checklist – Pro-active planning
  - Media Liaison checklist – During response and relief after a disaster
  - Media Liaison checklist – During recovery and reconstruction after a disaster
- Resource Data Base
  - Key components and other requirements for record purposes.
  - Recommended index of categories and sub-categories of resources available.
    - Aviation Support
    - Clothing
  - Construction Equipment (Heavy)
  - Construction Equipment (Medium / Light
  - Construction Materials

- Emergency Feeding
- Emergency Housing
- Essential Services / Supplies (Water / Electricity / Fuel Etc…)
- Fire and Rescue
- Food Manufacturers
- Food Supplies
- Handling of Deceased
- Medical Services
- Medical Supplies
- Non-Government Organisations
- Religious Groupings
- Telecommunications
- Transport (Passenger)
- Transport (Goods)
- Transport (Recovery)
- Municipal Resources

- General
  - Establishing A Disaster Management Advisory Forum.
  - Establishing A Volunteer Unit
  - Media Liaison Planning
  - Mutual Aid Agreements

10 Testing and review

The testing of disaster response plans is vital in ensuring that systems and processes agreed to are implementable and workable. This must be complying with.

11 Relationship with development

Each development project envisaged must be referred to the Disaster Management Centre. The following aspects pertaining to such a project must be answered to the satisfaction of the relevant Disaster Management Centre or facilities:

- Results of the impact study.

- Could this project cause existing hazards (upstream / downstream) to increase (e.g. increased water flow into an existing stream, thus potentially increasing the possibility of flooding).
- Again if not reflected in 1.1 above, is the proposed project outside of existing safety limits (e.g. 50 year flood line / safety zone of an existing producer of potential dangerous substances).

For each development project being implemented, the following must be submitted to the Disaster Management Centre/facility:

- Persons in charge of project, with contact details.
- Date project was commenced.
- Estimated date of completion.
- Any proposed and actual changes to the project.
- Date project completed.

12 IDP Projects and the Impact on Disaster Management

Projects from the IDP were identified and related to Disaster Management. In the first instance the impact on Disaster Management was identified and secondly the hazard profile of //Khara Hais were overlaid on the location of proposed developments. Hazards were identified that can have an influence on the disaster risk of the development.

It is proposed that the impact of these hazards be addressed in the planning of the development.

Project	Impact on Disaster Management	Hazard Profile
Develop a new Shopping Centre in Upington	Were a Disaster Risk Assessment completed?	Hazmat, Aircraft
Development of Upington 26 Route	Were a Disaster Risk Assessment completed?	
Investigate possible township establishment (incl. all functions) and housing at Melkstroom/Uap	Were a Disaster Risk Assessment completed?	Flood, Fire, Aircraft
"Noordoewer" development of the river	Were a Disaster Risk Assessment completed? Especially flood damages.	Flood, Aircraft
Ensure that vehicles used to transport scholars are safe to ensure the safety of the pupils	Disaster Risk Reduction measure • Transport safety	
Replanning of the local taxi rank	Impact on the security of town centre	
Improvement of Borcherd street traffic circle.	Impact on safety	
Tarring / paving of streets in all residential areas according too annual identification process.	Impact on safety Improve resilience to cope with disasters	
Rectify danger zone at the end of Dakota road (gravel road)	Disaster Risk Reduction Measure • Transport of Hazmat material Improve safety	
Lengthening & tarring of Dakota Road as pass road for heavy vehicles to Olifantshoek road.	Disaster Risk Reduction Measure	
Upgrading of CBD stormwater system.	Disaster Risk Reduction Measure	

Project	Impact on Disaster Management	Hazard Profile
Detailed investigation into the provision of waterborne sewer systems for outlying communities	Disaster Risk Reduction Measure Impact on pollution Impact on health	
Extension of Louisvale Road- sewerage works	Disaster Risk Reduction Measure • Impact on pollution • Impact on health	
Ensure safe medical waste by regular inspections of medical waste generators and crematorium	Disaster Risk Reduction Measure • Impact on pollution • Impact on health	
Ensure safe water for all by regular testing of water quality.	Disaster Risk Reduction Measure • Impact on pollution • Impact on health	
Additional staff for the clinic in Kalksloot and Raaswater- fulltime nurses as well as social worker & doctor visiting the clinic	Impact on health Increase communities capability to cope with disasters	
More regular clinic visits rural areas and to Leseding and Louisvale	Impact on health Increase communities capability to cope with disasters	
Clinic for Lambrechtsdrif, Leseding, Uitlkoms & Louisvale.	Impact on health Increase communities capability to cope with disasters	
Upgrading of the clinic in Leerkrans, Louisvale Road (mobile) & Karos.	Impact on health Increase communities capability to cope with disasters	

Project	Impact on Disaster Management	Hazard Profile
Clinic as a day hospital in Rosedale	Impact on health Increase communities capability to cope with disasters	
Information sessions & workshops regarding HIV/AIDS & all aspects thereof, i.e. prevention, testing, support etc.	Impact on health Increase communities capability to cope with disasters	
Overall campaign regarding HIV/AIDS including a centre, workshop, information project, testing, housing, after care, prevention etc.	Impact on health Increase communities capability to cope with disasters	
Bring emergency services closer to all communities by speeding up process with the ACT as partners in establishing satellite Fire Stations in all areas that qualify for Fire Services.	Impact on health Increase communities capability to cope with disasters	
Minimize fire risks in informal settlements by continuously giving training to residents in shacks about Fire safety & prevention	Disaster Risk Reduction Measure Increase communities capability to cope with disasters	
Training of Fire Fighters for all wards, First Aid levels 1,2 and 3 under the Disaster Management Unit	Disaster Risk Reduction Measure Increase communities capability to cope with disasters	
Provision of Fire Hydrants in areas without hydrants as well as maintenance of existing Fire Hydrants	Disaster Risk Reduction Measure Impact on Fire Risk	
Marking of Fire Hydrants	Disaster Risk Reduction Measure Impact on Fire Risk	
Safeguarding of parks in residential areas through regular patrols in & around the parks.	Impact on safety	

Project	Impact on Disaster Management	Hazard Profile
Local Authority's security services will monitor business hours of businesses, recreational places, i.e. taverns & must apply regulations i.e. closing of shebeens	Impact on security and safety.	
Increased visibility and security at waste dumping sites, parks, stadiums, cemeteries, Civic Halls and the increasing of patrols within the community.	Impact on security and safety.	
Prevention and minimizing alcohol and drug abuse	Impact on security and safety.	
Prevention of vandalism	Impact on security and safety.	
Include awareness campaigns in communication strategy	Impact on security and safety.	
Provide telecommunication systems in informal settlements	Impact on security and safety. Increase communities capability to cope with disasters	